Synway Software Tool

ShTA.exe

Tone Analyzer User Manual

Synway Information Engineering Co., Ltd

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Chapter 1 Overview

The bug sometimes found in the use of Synway analog boards of failing to make a call over analog trunk or detect the hangup behavior at the remote end probably results from the inconsistency between the call progress tone parameters set for the board and those for certain small-sized PBXes or key telephone systems. The tone frequency and cycle of some small PBX do not comply with the standard of the COT (Central Office Terminal) PBX while the default tone settings of Synway boards follow the standard. Therefore, it may happen that a Synway analog board can't properly detect the dial tone, the ringback tone, the busy tone and etc. from a small PBX.

ShTA.exe is a software tool to enable the detection and analysis on parameters of the call progress tones that go through analog trunks.

1.1 Test Scenarios A: Single Channel Mode

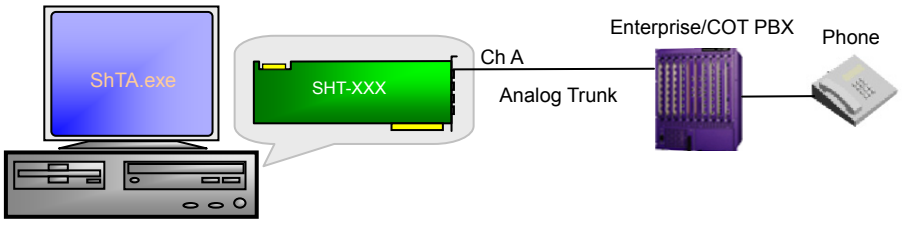

Figure 1-1 Single Channel Mode

1.2 Test Scenarios B: Direct Mode

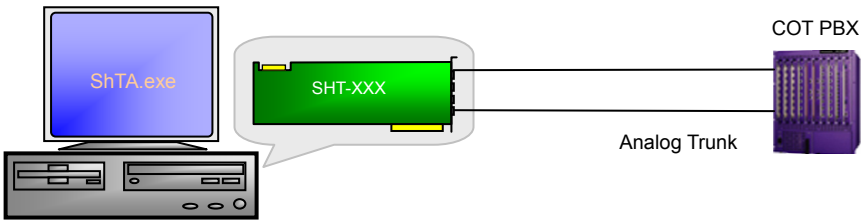

Figure 1-2 Direct Mode

1.3 Test Scenarios C: Extension Mode

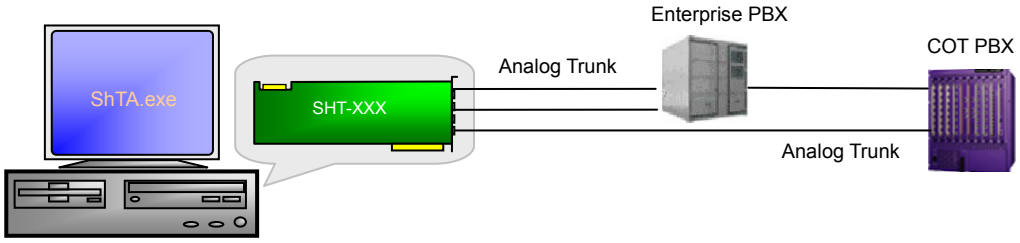

Figure 1-3 Extension Mode

1.4 Test Scenarios D: Pure Extension Mode

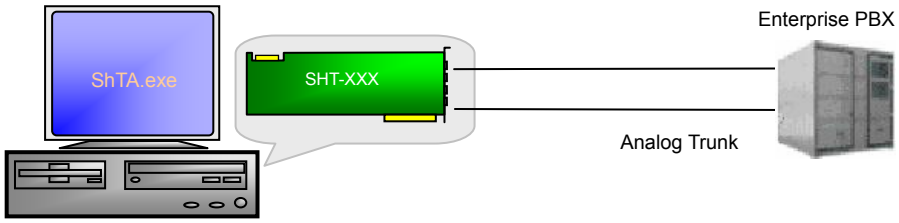

Figure 1-4 Pure Extension Mode

Chapter 2 Tone Analysis Procedure

Single Channel Mode means the application system is connected to the enterprise PBX or the COT PBX via only one analog trunk.
Direct Mode means the application system is directly connected with the analog trunk from the COT PBX.
Extension Mode means the application is connected with the analog trunk from the COT PBX via the enterprise PBX.
During the tone analysis, four voice files Dial.wav, Echo.wav, Busy.wav and Hangup.wav will be created under the same directory. And just on the basis of these files can the software tool ShTA.exe work for tone analysis.

2.1 Single Channel Mode

Note: Skip this section if you use Advanced Mode (Direct Mode, Extension Mode or Pure Extension Mode).
In Single Channel Mode, ShTA.exe will analyze the tone parameters of the PBX which is connected with the board and set the configuration items as TonePara, BusyTonePeriod, RingEchoTonePara, ToneDetectorItem[x] and the like.
Follow the operation procedure below to use ShTA.exe.
Step 1:
Connect the lines according to Figure 1-1 and run ShTA.exe. Then the main interface as shown in Figure 2-1 appears. Fill in 'ChA number' and the phone number to be called.

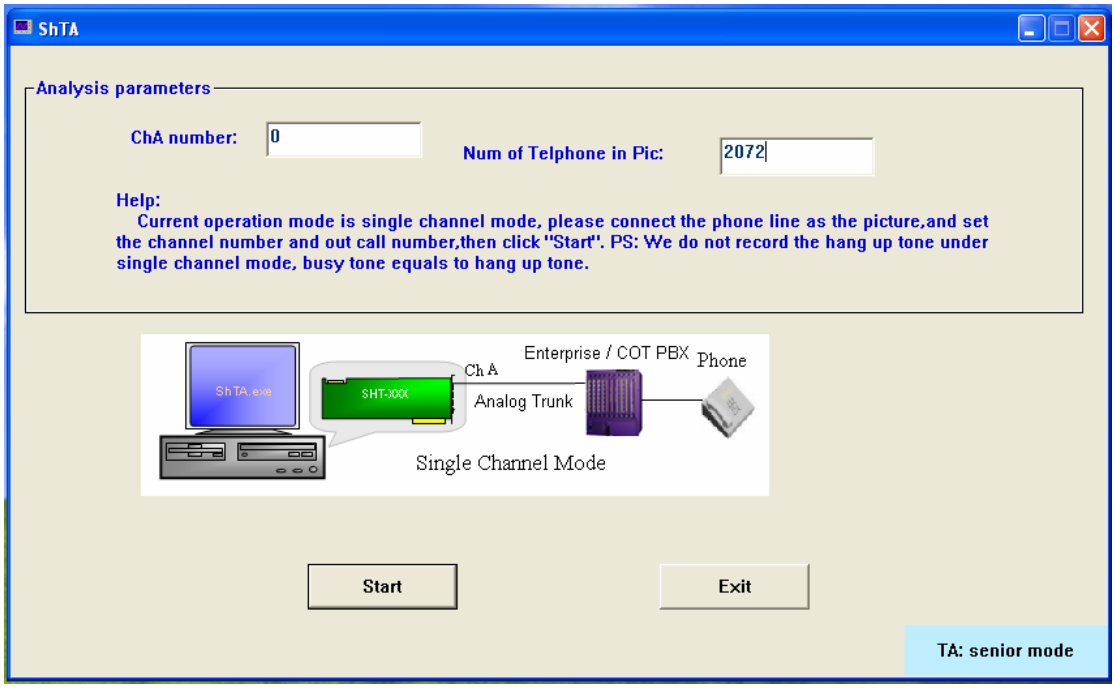
ShTA
Analysis parameters
ChA number:
0
Num of Telphone in Pic:
2072
Help:
Current operation mode is single channel mode, please connect the phone line as the picture,and set the channel number and out call number,then click "Start". PS: We do not record the hang up tone under single channel mode, busy tone equals to hang up tone.
ShTA.exe
SHT-XXX
Ch A
Analog Trunk
Enterprise / COT PBX
Phone
Single Channel Mode
Start
Exit
TA: senior mode

Figure 2-1 Main Interface upon Run of ShTA.exe

Step 2:

Click on 'Start' and the program starts to analyze tones as shown in Figure 2-2 below.

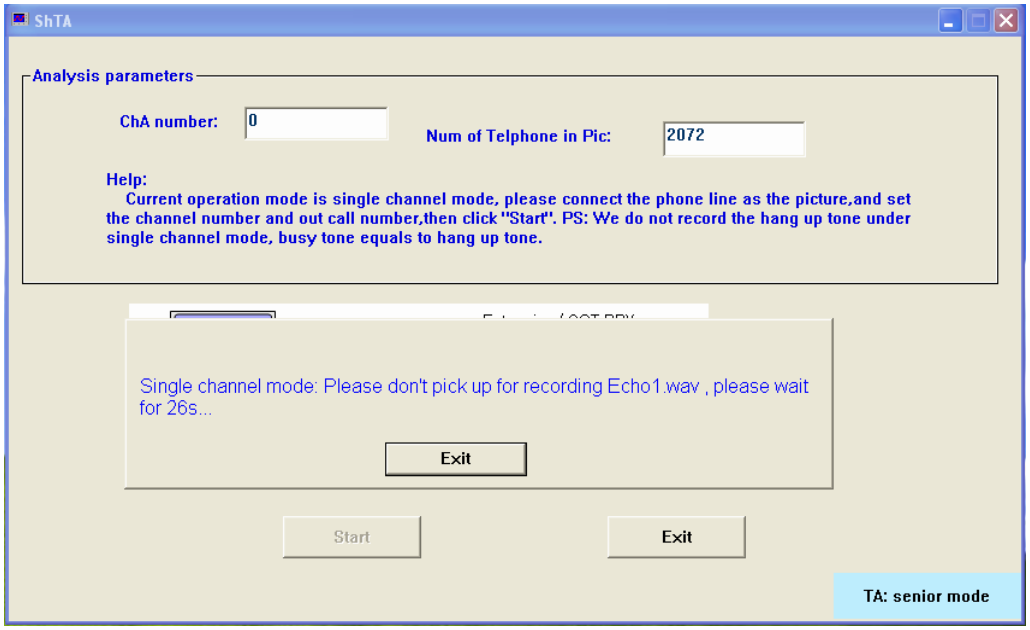
ShTA
Analysis parameters
ChA number:
0
Num of Telphone in Pic:
2072
Help:
Current operation mode is single channel mode, please connect the phone line as the picture,and set the channel number and out call number,then click "Start". PS: We do not record the hang up tone under single channel mode, busy tone equals to hang up tone.
Single channel mode: Please don't pick up for recording Echo1.wav , please wait for 26s...
Exit
Start
Exit
TA: senior mode

Figure 2-2 Start to Analyze Tones

Step 3:

If it is successful in tone analysis, the dialog 'Tone Analysis Result' will pop up as shown in Figure 2-3 below. Click the 'Write' button and the tone configuration will be written into the configuration file.

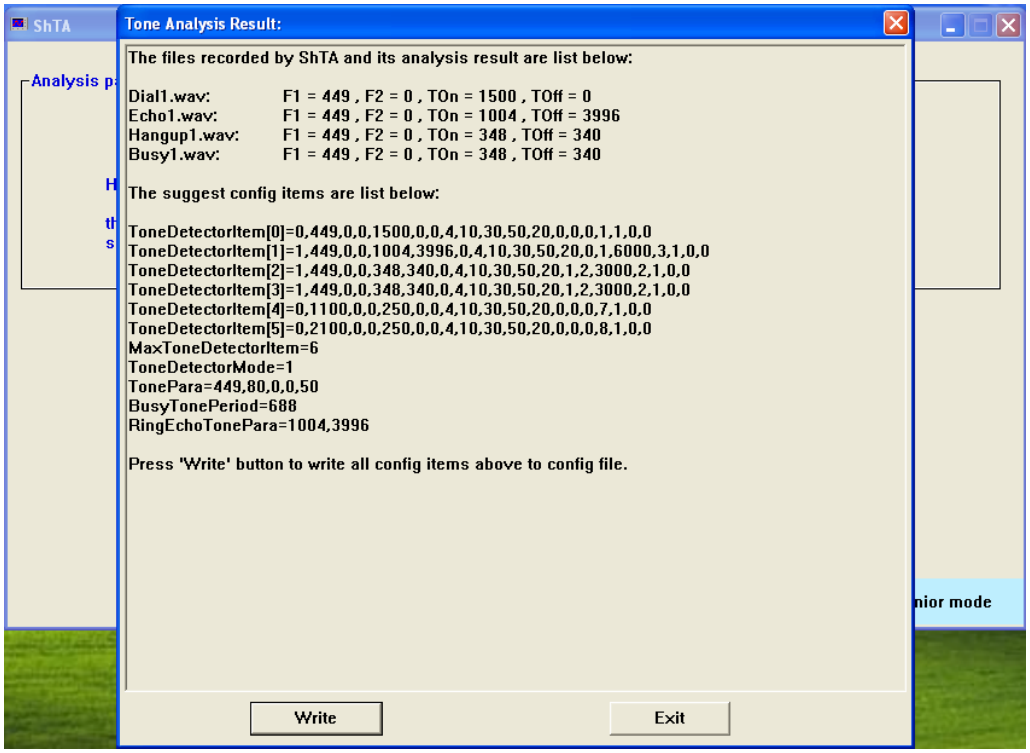
ShTA
Tone Analysis Result:
The files recorded by ShTA and its analysis result are list below:
Dial1.wav: F1 = 449 , F2 = 0 , TOn = 1500 , TOff = 0
Echo1.wav: F1 = 449 , F2 = 0 , TOn = 1004 , TOff = 3996
Hangup1.wav: F1 = 449 , F2 = 0 , TOn = 348 , TOff = 340
Busy1.wav: F1 = 449 , F2 = 0 , TOn = 348 , TOff = 340
The suggest config items are list below:
ToneDetectorItem[0]=0,449,0,0,1500,0,0,4,10,30,50,20,0,0,0,1,1,0,0
ToneDetectorItem[1]=1,449,0,0,1004,3996,0,4,10,30,50,20,0,1,6000,3,1,0,0
ToneDetectorItem[2]=1,449,0,0,348,340,0,4,10,30,50,20,1,2,3000,2,1,0,0
ToneDetectorItem[3]=1,449,0,0,348,340,0,4,10,30,50,20,1,2,3000,2,1,0,0
ToneDetectorItem[4]=0,1100,0,0,250,0,0,4,10,30,50,20,0,0,0,7,1,0,0
ToneDetectorItem[5]=0,2100,0,0,250,0,0,4,10,30,50,20,0,0,0,8,1,0,0
MaxToneDetectorItem=6
ToneDetectorMode=1
TonePara=449,80,0,0,50
BusyTonePeriod=688
RingEchoTonePara=1004,3996
Press 'Write' button to write all config items above to config file.
Write
Exit

Figure 2-3 Tone Analysis Result

2.2 Direct Mode

Note: Skip this section if you use Extension Mode.

In Direct Mode, ShTA.exe will analyze the tone parameters of the PBX which is connected with the board and set such configuration items as TonePara, BusyTonePeriod, RingEchoTonePara, ToneDetectorItem[x] and the like.

Follow the operation procedure below to use ShTA.exe.

Step 1:

Connect lines according to Figure 1-2 and run ShTA.exe. Then the main interface as shown in Figure 2-4 appears. Fill in 'ChA number', 'ChB number' and their corresponding phone numbers. Select Direct Mode (Direct line to station exchange) for 'Flow type'.

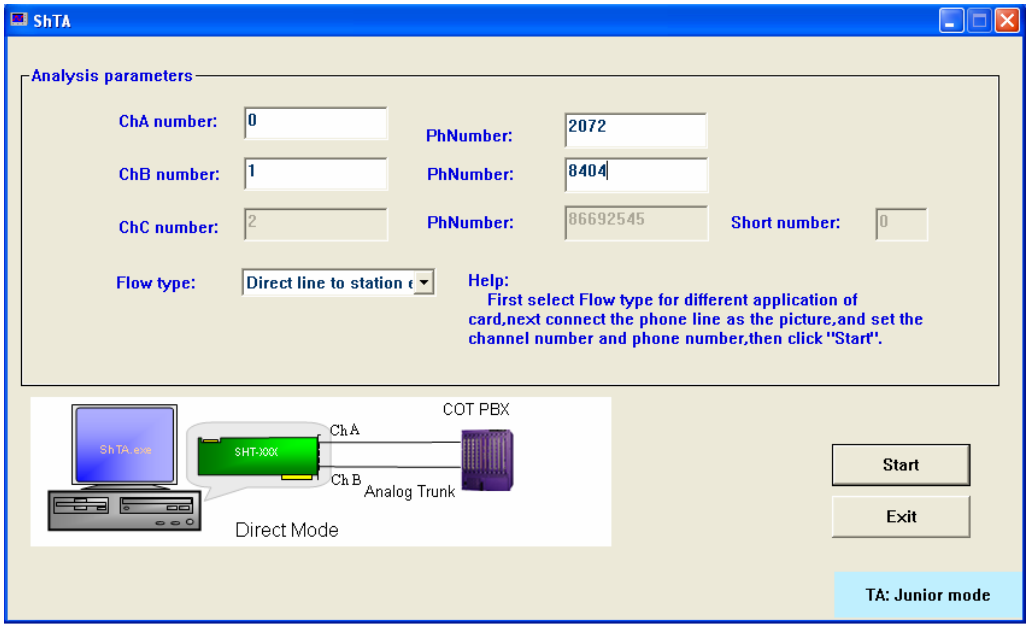

Figure 2-4 Main Interface upon Run of ShTA.exe

Step 2:

Click on 'Start' and the program starts to analyze tones as shown in Figure 2-5 below.

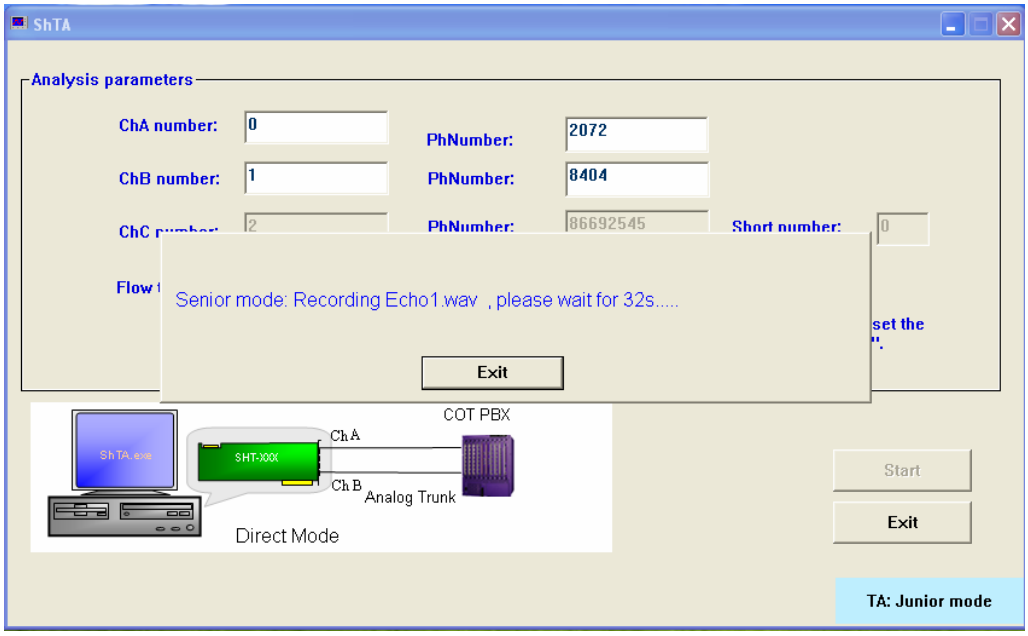

Figure 2-5 Start to Analyze Tones

Step 3:

If it is successful in tone analysis, the dialog 'Tone Analysis Result' will pop up as shown in Figure 2-6 below. Click the 'Write' button and the tone configuration will be written into the configuration file.

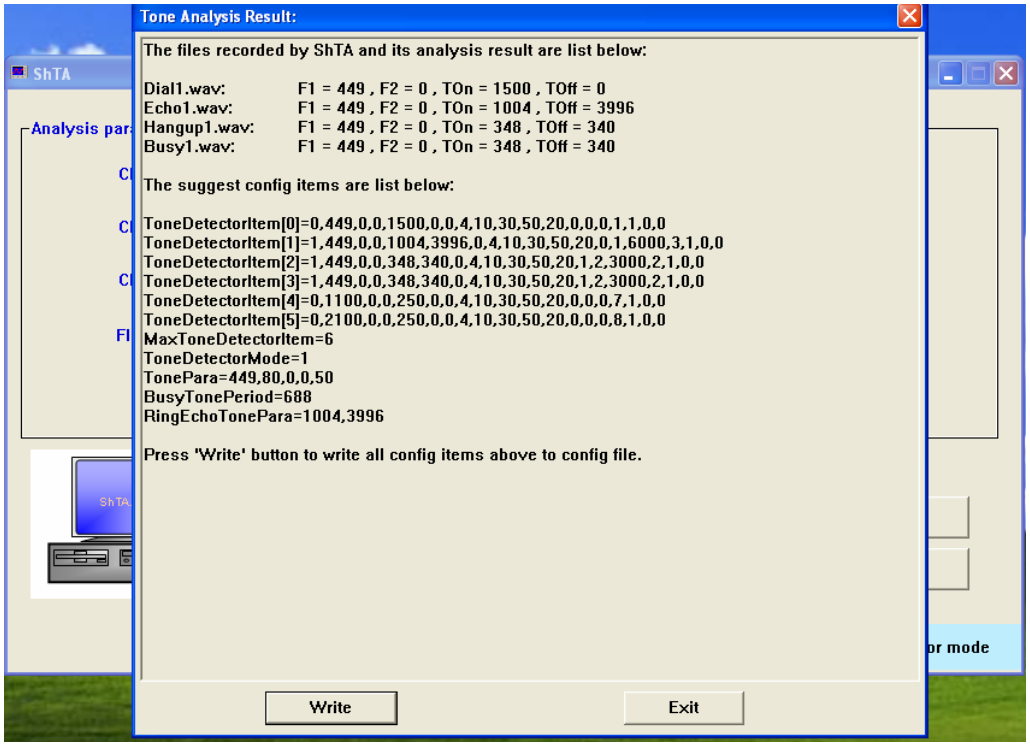
Tone Analysis Result:
The files recorded by ShTA and its analysis result are list below:
Dial1.wav: F1 = 449 , F2 = 0 , TOn = 1500 , TOff = 0
Echo1.wav: F1 = 449 , F2 = 0 , TOn = 1004 , TOff = 3996
Hangup1.wav: F1 = 449 , F2 = 0 , TOn = 348 , TOff = 340
Busy1.wav: F1 = 449 , F2 = 0 , TOn = 348 , TOff = 340
The suggest config items are list below:
ToneDetectorItem[0]=0,449,0,0,1500,0,0,4,10,30,50,20,0,0,0,1,1,0,0
ToneDetectorItem[1]=1,449,0,0,1004,3996,0,4,10,30,50,20,0,1,6000,3,1,0,0
ToneDetectorItem[2]=1,449,0,0,348,340,0,4,10,30,50,20,1,2,3000,2,1,0,0
ToneDetectorItem[3]=1,449,0,0,348,340,0,4,10,30,50,20,1,2,3000,2,1,0,0
ToneDetectorItem[4]=0,1100,0,0,250,0,0,4,10,30,50,20,0,0,0,7,1,0,0
ToneDetectorItem[5]=0,2100,0,0,250,0,0,4,10,30,50,20,0,0,0,8,1,0,0
MaxToneDetectorItem=6
ToneDetectorMode=1
TonePara=449,80,0,0,50
BusyTonePeriod=688
RingEchoTonePara=1004,3996
Press 'Write' button to write all config items above to config file.
Write
Exit

Figure 2-6 Tone Analysis Result

2.3 Extension Mode

Note: Read this section if you use Direct Mode and Extension Mode at the same time.

In Extension Mode, ShTA.exe will analyze the tone parameters of both the COT PBX and the enterprise PBX, and set such configuration items as TonePara, BusyTonePeriod, RingEchoTonePara, 2ndTonePara, 2ndBusyTonePeriod, 2ndRingEchoTonePara, ToneDetectorItem[x] and the like.

Follow the operation procedure below to use ShTA.exe.

Step 1:

Connect lines according to Figure 1-3 and run ShTA.exe. Then the main interface as shown in Figure 2-7 appears. Fill in 'Short number', 'ChA number' (connected to the enterprise PBX), 'ChB number' (connected to the enterprise PBX), 'ChC number' (connected to the COT PBX) and their corresponding phone numbers. Select Extension Mode (Extension to exchange) for 'Flow type'.

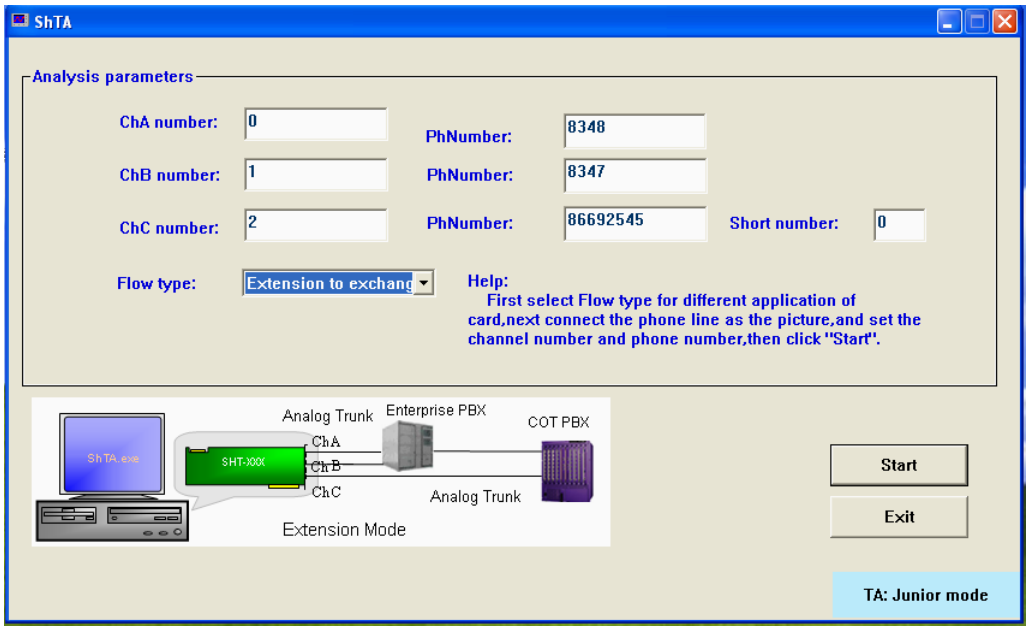

Figure 2-7 Main Interface upon Run of ShTA.exe

Step 2:

Click on 'Start' and the program starts to analyze tones as shown in Figure 2-8 below.

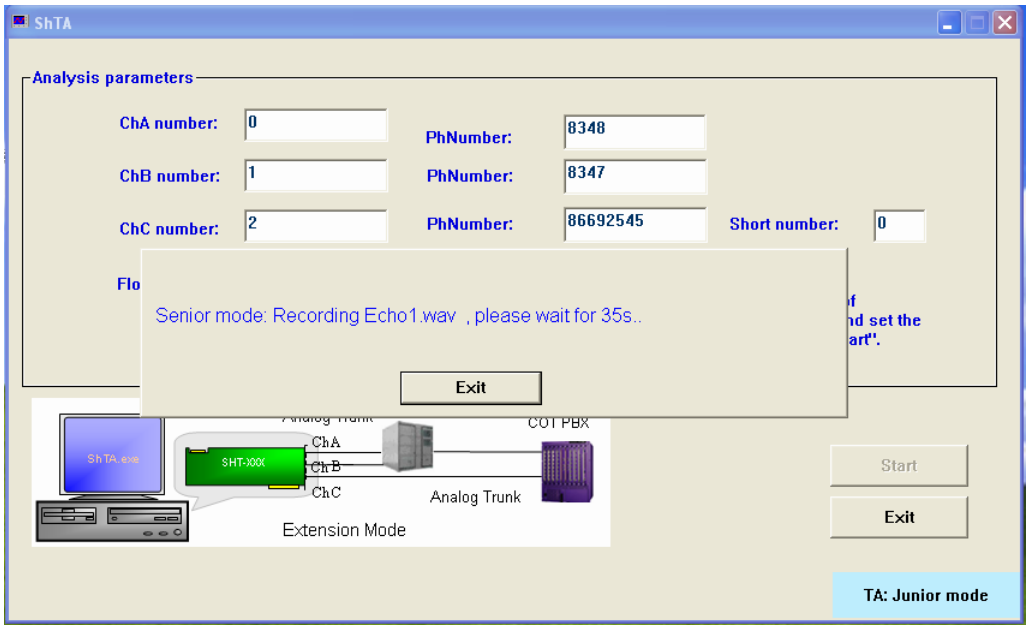

Figure 2-8 Start to Analyze Tones

Step 3:

If it is successful in tone analysis, the dialog 'Tone Analysis Result' will pop up as shown in Figure 2-9 below. Click the 'Write' button and the tone configuration will be written into the configuration file.

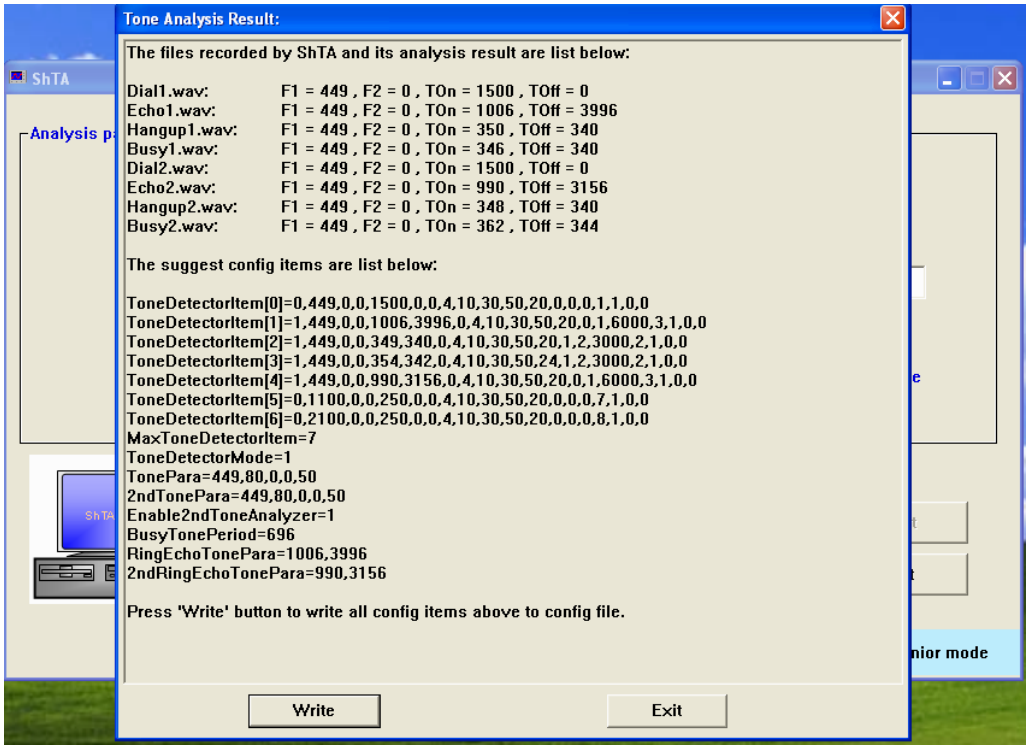
Tone Analysis Result:
The files recorded by ShTA and its analysis result are list below:
Dial1.wav: F1 = 449 , F2 = 0 , TOn = 1500 , TOff = 0
Echo1.wav: F1 = 449 , F2 = 0 , TOn = 1006 , TOff = 3996
Hangup1.wav: F1 = 449 , F2 = 0 , TOn = 350 , TOff = 340
Busy1.wav: F1 = 449 , F2 = 0 , TOn = 346 , TOff = 340
Dial2.wav: F1 = 449 , F2 = 0 , TOn = 1500 , TOff = 0
Echo2.wav: F1 = 449 , F2 = 0 , TOn = 990 , TOff = 3156
Hangup2.wav: F1 = 449 , F2 = 0 , TOn = 348 , TOff = 340
Busy2.wav: F1 = 449 , F2 = 0 , TOn = 362 , TOff = 344
The suggest config items are list below:
ToneDetectorItem[0]=0,449,0,0,1500,0,0,4,10,30,50,20,0,0,0,1,1,0,0
ToneDetectorItem[1]=1,449,0,0,1006,3996,0,4,10,30,50,20,0,1,6000,3,1,0,0
ToneDetectorItem[2]=1,449,0,0,349,340,0,4,10,30,50,20,1,2,3000,2,1,0,0
ToneDetectorItem[3]=1,449,0,0,354,342,0,4,10,30,50,24,1,2,3000,2,1,0,0
ToneDetectorItem[4]=1,449,0,0,990,3156,0,4,10,30,50,20,0,1,6000,3,1,0,0
ToneDetectorItem[5]=0,1100,0,0,250,0,0,4,10,30,50,20,0,0,0,7,1,0,0
ToneDetectorItem[6]=0,2100,0,0,250,0,0,4,10,30,50,20,0,0,0,8,1,0,0
MaxToneDetectorItem=7
ToneDetectorMode=1
TonePara=449,80,0,0,50
2ndTonePara=449,80,0,0,50
Enable2ndToneAnalyzer=1
BusyTonePeriod=696
RingEchoTonePara=1006,3996
2ndRingEchoTonePara=990,3156
Press 'Write' button to write all config items above to config file.
Write
Exit

Figure 2-9 Tone Analysis Result

2.4 Pure Extension Mode

Note: Skip this section if you only use Direct Mode.

In Pure Extension Mode, ShTA.exe will analyze the tone parameters for the PBX which is connected with the board and set such configuration items as TonePara, BusyTonePeriod, RingEchoTonePara, ToneDetectorItem[x] and the like.

Follow the operation procedure below to use ShTA.exe.

Step 1:

Connect lines according to Figure 1-4 and run ShTA.exe. Then the main interface as shown in Figure 2-10 appears. Fill in 'ChA number', 'ChB number' and their corresponding phone numbers. Select Pure Extension Mode (Only local exchange) for 'Flow type'.

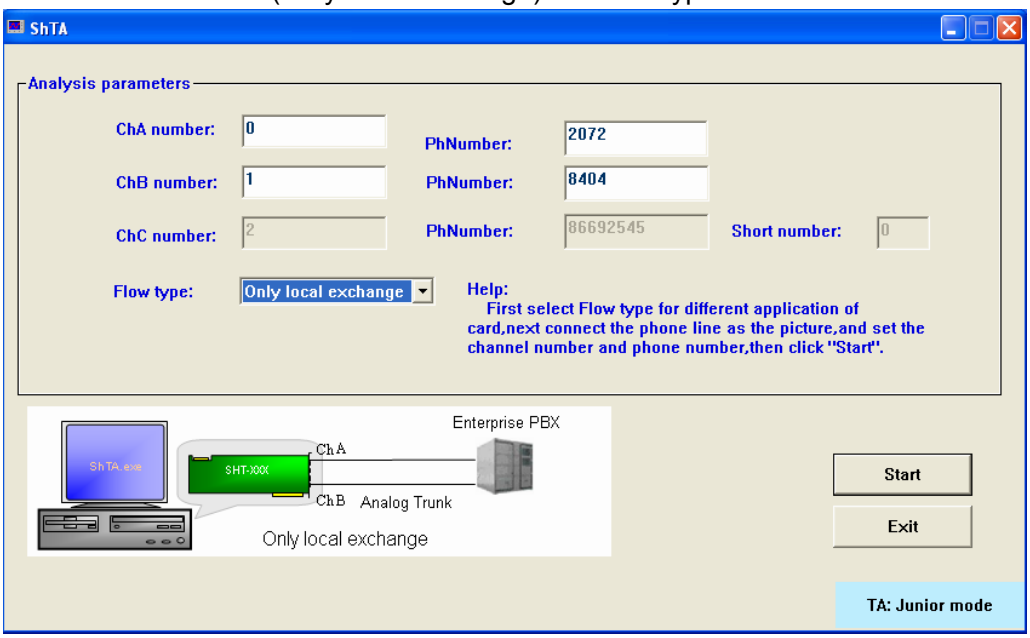

Figure 2-10 Main Interface upon Run of ShTA.exe

Step 2:

Click on 'Start' and the program starts to analyze tones as shown in Figure 2-11 below.

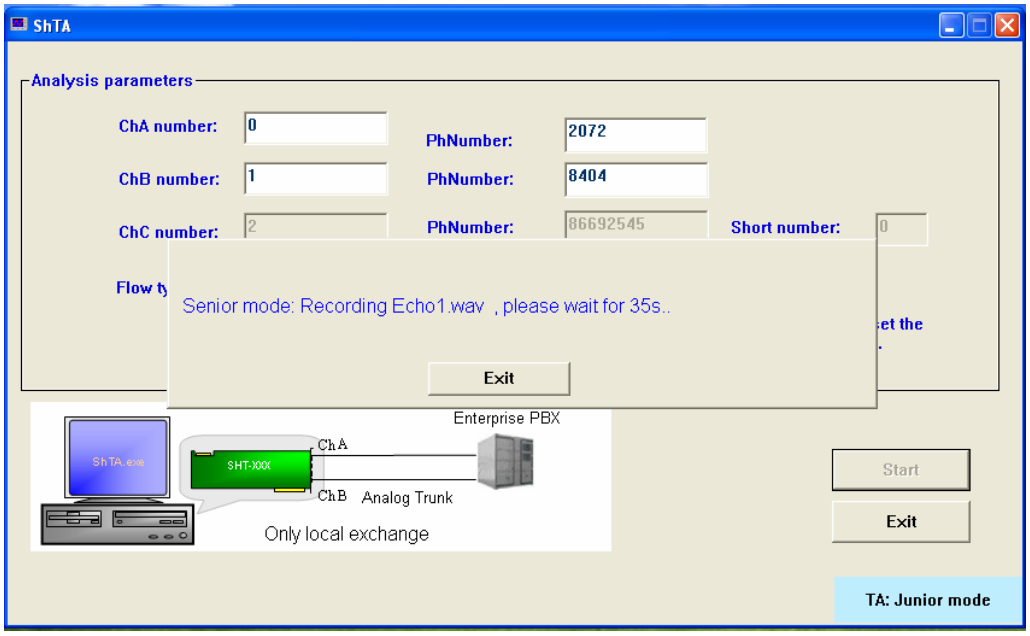

Figure 2-11 Start to Analyze Tones

Step 3:

If it is successful in tone analysis, the dialog 'Tone Analysis Result' will pop up as shown in Figure 2-12 below. Click the 'Write' button and the tone configuration will be written into the configuration file.

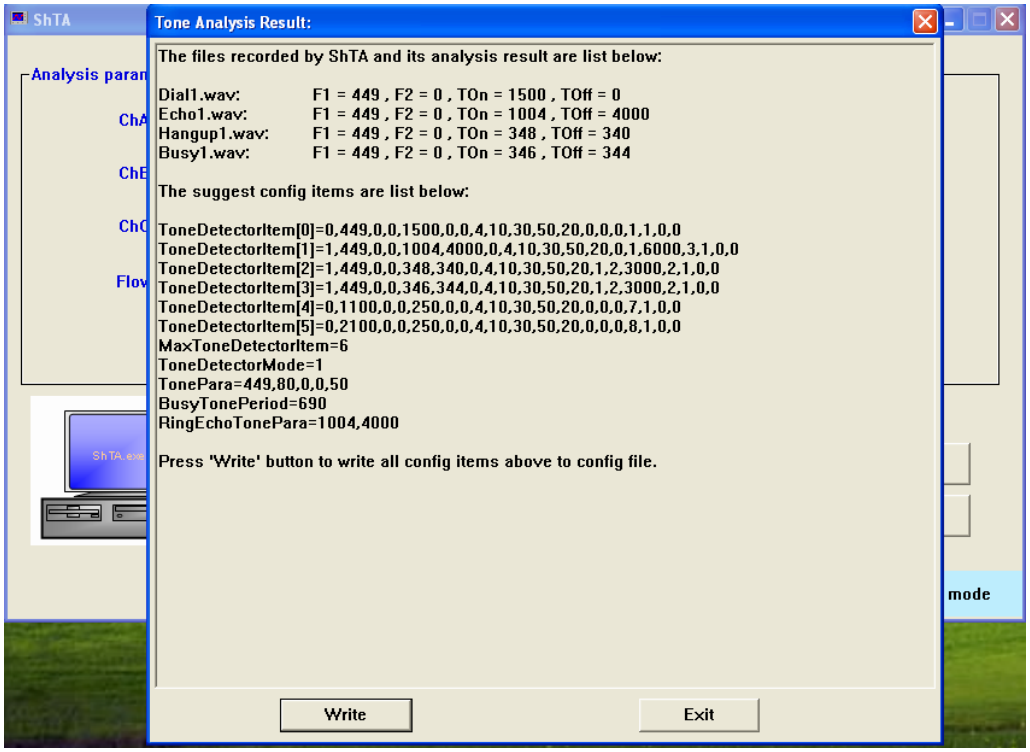
Tone Analysis Result:
The files recorded by ShTA and its analysis result are list below:
Dial1.wav: F1 = 449 , F2 = 0 , TOn = 1500 , TOff = 0
Echo1.wav: F1 = 449 , F2 = 0 , TOn = 1004 , TOff = 4000
Hangup1.wav: F1 = 449 , F2 = 0 , TOn = 348 , TOff = 340
Busy1.wav: F1 = 449 , F2 = 0 , TOn = 346 , TOff = 344
The suggest config items are list below:
ToneDetectorItem[0]=0,449,0,0,1500,0,0,4,10,30,50,20,0,0,0,1,1,0,0
ToneDetectorItem[1]=1,449,0,0,1004,4000,0,4,10,30,50,20,0,1,6000,3,1,0,0
ToneDetectorItem[2]=1,449,0,0,348,340,0,4,10,30,50,20,1,2,3000,2,1,0,0
ToneDetectorItem[3]=1,449,0,0,346,344,0,4,10,30,50,20,1,2,3000,2,1,0,0
ToneDetectorItem[4]=0,1100,0,0,250,0,0,4,10,30,50,20,0,0,0,7,1,0,0
ToneDetectorItem[5]=0,2100,0,0,250,0,0,4,10,30,50,20,0,0,0,8,1,0,0
MaxToneDetectorItem=6
ToneDetectorMode=1
TonePara=449,80,0,0,50
BusyTonePeriod=690
RingEchoTonePara=1004,4000
Press 'Write' button to write all config items above to config file.
Write
Exit

Figure 2-12 Analysis Result

Appendix A Technical/sales Support

Thank you for choosing Synway. Please contact us should you have any inquiry regarding our products. We shall do our best to help you.

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